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Mrs. Reagan Blocked in Move to Pick NIH Cancer Head

The White House has abruptly dropped a plan to install Nancy Reagan's handpicked choice for Director of the National Cancer Institute (NCI) following a groundswell of opposition early this month from the biomedical research community, SGR has learned.

The First Lady's candidate, a California surgeon who has not been publicly identified, was quietly moving toward a Presidential appointment when the biomedical establishment was put on alert. The signal came from the National Institutes of Health (NIH), homebase of NCI, after the White House directed NIH not to trigger the search-committee ritual customarily used to fill senior NIH posts.

The Directorship of NCI, richest and most publicly visible of all NIH components, became vacant in August when Vincent T. DeVita Jr. resigned to join

the Memorial Sloan-Kettering Cancer Center, N.Y., for an estimated \$400,000 a year. The NCI post is filled by Presidential appointment, and does not require Senate confirmation.

NIH Director James B. Wyngaarden had initially proposed to the Secretary of Health and Human Services (HHS), parent agency of NIH, that several senior HHS officials constitute the search committee, along with a number of outside advisers—which was the lineup used in 1980 for picking DeVita. To the astonishment of NIH, word came back from the White House that the search was over and the selection had been made.

The NIH jungle telegraph was instantly activated, bringing deans, pharmaceutical executives, and interested legislators to register their concern. The pro-

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White House Science Office Faintly Stirs in Closing Days

Amid the finale of the Reagan Administration comes a faint indication of a pulse at the Office of Science and Technology Policy (OSTP): an announcement, dated September 12, of the addition of five members to the White House Science Council, thus bringing the membership to 16 (see box, P. 2).

Like a noble gas, the Council is neither visible nor active. But on the statute books, it is designated to serve as adviser to the President's Science Adviser, William R. Graham, the bureaucratic version of the stealth aircraft. It doesn't return radar signals, he doesn't return phone calls, and both try to keep out of public view.

Thus, there is no handy explanation for Graham's ninth-inning, two-out appointments to what is supposed to be the apex of collective scientific sagacity for the Presidency. It may be speculated that if Vice President Bush wins the election, an illusion of a functioning science-advisory apparatus might dispose him favorably toward keeping the on-board staff. But even that's a far-fetched possibility, given the ever-widening consensus that the science-advisory system has essentially fallen apart.

From the Republican-flavored Council on Competitiveness to the Democrat-dominated CORETECH lobby of academe and high-tech industry, the message on presidential science advice is the same: rebuild the advisory office and elevate its role in decision making. The implication, which no one any longer bothers to be

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In Brief

Congress, with the grumbling assent of the NIH management, is close to adding another institute to the Bethesda complex, raising the total to 13. The newcomer is the National Institute on Deafness and Other Communication Disorders. It's been extracted from the National Institute of Neurological and Communicative Disorders and Stroke. It would receive about \$96 million from the \$574 million appropriated for its former home. Still brewing on Capitol Hill is an institute for research on physical handicaps and rehabilitation.

NSF reports that it's stretched thin to meet the wants of its grant applicants. "NSF funds only one in three disciplinary proposals received and at only 65 percent of the dollar amount requested," a Foundation analysis states. "In fact," it says, "if NSF were to fund all the 'fundable' proposals it receives, this would probably double the number of awards."

Though the NSF awards pack more dollars, they're a shadow of long-ago funding in terms of purchasing power, the Foundation claims. "The average NSF disciplinary research award in constant (1987) dollars," it says, "declined from a peak in the early 1960s of \$140,000 to \$80,000 today."

Overall, the major federal research agencies registered modest gains in a difficult budget year. With most appropriations bills passed and signed or close to it, the gain over current funding was as follows: NIH, 6 percent; NSF, 10 percent; NASA R&D, 28 percent; Department of Energy science and research, 14 percent. The appropriations are for the fiscal 1989, which starts October 1.

... Voters Have No Interest in Science-Policy Issues

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polite about, is that the task ahead is to raise the dead rather than merely heal the sick.

So far, the presidential candidates have only nodded at the issue, which reflects the fact that science policy, though of urgent importance to the scientific community and its leaders, is below the threshold of political notice. The candidates speak enthusiastically about keeping the nation strong in science and various technologies. The Republican platform devoted considerable space to generalizing on those subjects, while the Democrats gave a brief blessing.

But there's already a pre-existing national consensus for the federal government to provide science and technology with a great deal of care and feeding—which now amounts to \$65 billion a year in federal R&D. The sum is so great as to leave little room for anyone to emerge as the political champion for substantially greater spending. One reason, of course, is that the prospects for increased federal spending in any area have been so dimmed by anti-deficit pressures that both candidates have been extremely cautious with promises of more.

In 1984, Senator John Glenn (D-Ohio) pitched his primary campaign for the Democratic presidential nomination on pledges of more money and attention for R&D and science and engineering education. He came out with a massive financial debt and not one convention delegate. The lesson derived by political aficionados was that there's little or no political profit to be gained from assuring the voters that you'll be very attentive to the budget of the National Science Foundation and to the peculiar problems of technology transfer from the national laboratories to the commercial sector. Furthermore, it has been often noted that while scientists and their organizations unhesitatingly express their professional needs to members of Congress, they don't organize to ring doorbells at election time or to raise money for their supporters on Capitol Hill.

Possibly because of the presidential candidates' aloofness from science-policy issues, the current campaign has brought out especially loud cries for attention from the scientific community. The strongest, but by no means the first or last, came at the end of August, when the presidents of 23 science and engineering societies, with total memberships of over 750,000, sent a collective letter to Bush and Dukakis to express "our shared concern over the need for a coherent science and technology policy"

The signatories didn't say they were contrasting a dismal present in science-policy affairs with a formula for a brighter future, but the plain inference stood out.

"Leadership in science and technology policy must

Following is the membership of the White House Science Council.

New appointees:

William G. Anlyan, Professor of Medicine, former Dean, Duke University School of Medicine

William L. Fisher, Chairman, Department of Geological Sciences, University of Texas, Austin; former Assistant Secretary of the Interior for Energy and Minerals

Bernadine P. Healy, Chairman of the Research Institute, Cleveland Clinic Foundation; former Deputy Director, OSTP

Thomas E. Lovejoy, Assistant Secretary for External Affairs, Smithsonian Institution

Dean A. Watkins, Chairman, Watkins-Johnson Co., Palo Alto

Previous appointees:

Solomon J. Buchsbaum (Chairman), Executive Vice President, AT&T Bell Laboratories

Edward A. Frieman (Vice Chairman), Director, Scripps Institution of Oceanography

Harold M. Agnew, President, GA Technologies, Inc., San Diego; former Director, Los Alamos National Laboratory

D. Allan Bromley, Professor of Physics, Yale University

Edward E. David Jr., EED, Inc., Bedminster, NJ, consultant; White House Science Adviser, 1971-73; former President, Exxon Research and Engineering

John M. Deutch, Provost, MIT; former Under Secretary of Energy

Donald S. Fredrickson, DSF Associates, Bethesda, Md.; Director, National Institutes of Health, 1975-81

Ralph E. Gomory, Senior Vice President, Science and Technology, IBM

David Packard, Chairman, Hewlett-Packard

Isadore Singer, Professor of Mathematics, MIT

Edward Teller, Senior Fellow, Hoover Institution; Associate Director, emeritus, Lawrence Livermore National Laboratory

come from the White House," the letter stated. "We therefore urge that . . . you devote careful thought to the White House science and technology advisory structure. We believe that this structure must be strengthened and that the person selected to be the principal science and technology adviser should have direct access to the President. That person should be a distinguished scientist or engineer who would enjoy not only the confidence of the President but the respect and trust of the science and technology community. In the absence of that trust," the society presidents pointedly stated, "the science adviser is isolated and ineffective.

"We also urge that the appointment of a Science and Technology Adviser be made early [in the new Adminis-

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... In Reversal, White House Tells Wyngaarden to Head Search

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test raised the possibility of an election-season uproar on the sensitive issue of cancer. Shortly afterwards, the White House did a turnaround and told Wyngaarden that a three-member search committee would be constituted, with Wyngaarden as chairman; the others are HHS Under Secretary Don M. Newman and HHS Assistant Secretary for Health Robert E. Windom. Serving as non-voting members are three staunch friends of the cancer-research establishment: Paul Marks, President of Memorial Sloan-Kettering; Benno Schmidt, a New York financier long active in cancer politics, and Maxine Singer, a longtime NCI researcher who was recently installed as President of the Carnegie Institution of Washington. The White House said it wants a recommenda-

tion by November 10.

NIH has moved quickly to publicize a wide-open search. Letters seeking nominees were sent last week to deans of all schools of medicine and public health, directors of cancer centers, and several hundred others—for a total of over 1000.

The NCI Director presides over an annual budget of \$1.5 billion and serves as a peacekeeper among the warring tribes of a biomedical Beirut—surgeons, chemotherapists, radiologists, preventionists, and immunologists, many of whom regard the others as crackpots. The Director also plays a key role in fending off the many “alternative” advocates who are keen to tap into the NCI’s treasury for pursuit of their own special remedies, which range from coffee enemas to funny movies.—DSG

Foreign Researchers in US Labs Surveyed in GAO Study

A Congressional survey of 50 major government laboratories has found that foreign researchers on long-term working visits come close to and sometimes exceed the number of visiting Americans from academe and industry. The study was initiated last year by the General Accounting Office (GAO), Congress’s investigatory service, at the request of Senate Finance Chairman Lloyd Bentsen (D-Tex.), Democratic candidate for Vice President.

Spawned by fears of an R&D giveaway to foreign competitors, the GAO study draws no conclusions. But it quotes several laboratory directors as saying that the

foreign visitors are a plus for American research, and that if there’s any problem, it’s that Americans are not making sufficient use of the national labs.

Some of the laboratory directors stated, the GAO notes, that “because they are concerned about providing foreign researchers access to fields of research or laboratory facilities with commercial potential, they carefully screen foreign proposals in these areas.” The remarks about such restrictions were attributed to the National Bureau of Standards, NASA’s Langley Research Center, Sandia National Laboratories, and the Oak Ridge National Laboratory.

But a general policy of openness was reported at the National Institutes of Health and the US Department of Agriculture’s Beltsville Agricultural Research Center. “The managers and administrators told us,” the GAO reported, “that historically they have pursued the best scientific research, regardless of the nationality of the collaborating researchers.” The report added: “Several NIH research managers expressed concern about any effort to restrict the number of foreign postdoctoral fellows who spend one to three years at NIH because they are intelligent and industrious and because NIH is facing increased competition for the best postdoctoral fellows from medical schools and biotechnology and pharmaceutical companies.”

Running on budgets that collectively consume about one-third of the \$65 billion currently appropriated for federal R&D, government-operated or wholly financed contractor-operated research facilities have long been the object of skeptical scrutiny by budget cutters and science-policy planners. Politically, however, they’re

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Science Advice

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tration],” they continued, in a clear reference to the four months that elapsed between President Reagan’s first inauguration and the appointment of his first Science Adviser, George A. Keyworth II. An early appointment, the letter stated, “would enable the adviser to have a voice in the selection of those sub-cabinet positions in the federal agencies that deal with technology issues. A hiatus in filling the position of Science and Technology Adviser at the start of a new Administration could prove costly to the nation.”

None of these advisories and admonitions are eye openers for the candidates. They’re old stuff in Bush’s Washington and in the Cambridge academic circles serving Governor Dukakis. But hard as it is to accept, the anxious providers of science-policy advice to the candidates must live with the reality that their heartfelt issues simply don’t rate high in American politics.—DSG

... Japanese Top List of Guests at US R&D Facilities

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well insulated, since their employees and their payrolls generally figure large in their Congressional districts. Recently, concern has shifted from their costs to their potential for contributing to industrial competitiveness. And, with xenophobia in the political atmosphere, the visiting foreigners have inspired Congressional interest.

The GAO reports that in fiscal 1986 (which ended September 30, 1987), research was conducted at the 50 labs it studied by 13,092 visiting Americans and 5677 visiting foreigners. But the balance turns out to be considerably closer when students are subtracted from the totals and numbers of full-fledged researchers are compared. On that basis, the US visitors totaled 4657, while the figure for foreign visitors stood at 3597.

On an agency-by-agency basis, the fiscal 1986 tally for visiting researchers at the 50 labs was as follows:

Agency	Permanent Lab Staff	Guest/Visiting Researchers	
		US	Foreign
USDA	1045	110	120
NBS	1537	467	312
NOAA	1645	77	75
Air Force	4393	241	38
Army	2479	306	23
Navy	5184	73	16
DOE energy R&D	7820	1817	1243
Defense programs	6454	571	418
FDA and NIOSH	962	34	49
NIH	1159	499	969
USGS	1568	61	82
NASA	9656	401	252

By nationality, Japan was tops in the number of all foreign visitors—students and degree holders—conducting research in US government labs, with 758, or 13 per cent of the total. Second was the UK, with 448 (8 percent), and third was the People's Republic of China, 438 (8 percent). The rest of the major rankings, by nationality: West Germany, 403 (7 percent); India, 366 (6 percent); Israel, 265 (5 percent); Canada, 239 (4 percent); Eastern European countries, 211 (4 percent).

For unexplained reasons, two major sources of working visitors to US government laboratories, France and Italy, are lumped together with "other Western European countries." The total for this aggregate is 1291, or 23 percent of all visitors.

Technology Transfer: US and Foreign Participation in R&D at Federal Laboratories (GAO/RCED-88-203BR, 76 pp., no charge, order from: US GAO, Post Office Box 6015, Gaithersburg, Md. 20877; tel. 202/275-6241.

Psychologist Pleads Guilty to Two False Information Charges

Stephen E. Breuning, reputedly the first university scientist ever prosecuted for criminal misuse of federal research funds, pleaded guilty in US District Court in Baltimore on September 19 and was scheduled for sentencing on November 10.

Breuning is likely to receive an extremely light sentence, relative to the maximum allowed. Nonetheless, he stands in disgrace, his research career is over, and the science-government relationship has experienced a symbolic first prosecution and conviction on the topical issue of scientific fraud.

The Judge will have the final say on Breuning's sentence. But under a plea agreement between Breuning and the US Attorney, Breuning would be barred from research for ten years and would have to repay about \$20,000 to the University of Pittsburgh, where he was a faculty member from 1981-84. The money represents salary derived from grants awarded to him during that time by the National Institute of Mental Health (NIMH). Pittsburgh has already repaid to NIMH the \$163,000 awarded for salaries and expenses in Breuning's research.

Breuning, who fabricated and published masses of data on behavior-control drugs for severely retarded institutionalized children (SGR March 15, 1987), pleaded guilty to two counts of making false statements to NIMH on grant applications. The maximum for each count is five years imprisonment and a \$10,000 fine. A third count, accusing Breuning of obstructing NIMH's investigation of his activities, was dropped as part of the plea agreement with the US Attorney.

Breuning, age 36, appeared subdued, perhaps even a bit stunned, as he stood before Judge Frank

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... Breuning Accused of Filing Phony Progress Report

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Kaufman. Asked by the Judge "whether you prefer to be addressed as Dr. Breuning or Mr. Breuning," he replied, "Mr. Breuning." He then endured 50 nearly uninterrupted minutes of questioning from the bench concerning whether he clearly understood the implications of his guilty pleas. The procedure is standard to guard against railroading of defendants, as well as to preclude a later recantation.

Over and over, the Judge questioned him about his understanding of his constitutional rights, his access to legal counsel, about whether he felt any coercion, and even whether he had had anything to drink within the past 24 hours. (Answer: "One beer last night.") In all instances, Breuning indicated, in a soft voice, that his mind was alert and clear and he knew what he was doing in entering the pleas.

A Statement of Evidence submitted by the government detailed the acts underlying the charges of making false statements. The charges arose from progress reports that Breuning submitted to NIMH for continuation of his research support. In 1983, in one such report, on a project titled "Stimulant Drug Use with Mentally Retarded Children," Breuning stated:

"Studies are proceeding nicely with respect to each of the specific aims. During the first year of this grant progress has been about as expected. Just over 65 percent of the children required for methylphenidate [Ritalin] studies have completed the protocol. Approximately 35 percent of the children required for the dextroamphetamine [Dexadrine] studies have completed the protocol. No problems are anticipated during the second year of the project."

The government's Statement of Evidence asserts that "the studies had not been completed at the University of Pittsburgh as described"; also that only 25 of 278 patients in the research unit where Breuning

was working had received either drug. The government's statement concludes: "The studies that were ongoing were not obtaining the results as described in the application for continuation [of the grant]."

At the conclusion of the hearing, the Judge ordered a presentence investigation and set November 10 for sentencing.

Breuning resigned from the University of Pittsburgh in 1984, shortly after his research claims were challenged by a colleague, Robert Sprague, of the University of Illinois.

Breuning was subsequently employed as Director of Psychological Services at the Polk Center, a state institution for the retarded, near Pittsburgh. He left that post when he was indicted last spring. During the court hearing, it was brought out that he is in the process of moving from Pittsburgh to Michigan and will be working outside the field of psychology.

NIH Names Fraud Office Head

The troubled fraud office at the National Institutes of Health has a new chief: M. Janet Newburgh, a biochemist who comes to the post from the NIH National Institute of General Medical Sciences, where she was Deputy Director of the Pharmacology Sciences Program. She succeeds Mary Miers, who held the post from 1983 until her recent appointment as Chief of Legislation and Analysis in the National Institute of Neurological and Communicative Disorders and Stroke.

The fraud post is officially titled Institutional Liaison Officer, and is situated in the Office of Extramural Research. In recent months it has come under severe Congressional fire for its leisurely and timid handling of fraud and misconduct complaints, some of which have languished for several years without resolution.

Applications Invited for Exchanges With USSR and Eastern Europe

The National Academy of Sciences invites applications for its next round of scholarly exchanges with the Soviet Union and Eastern European nations. The exchange period is for one year starting January 1, 1990. Visits may range from one month to a year, and are in a broad range of the life, physical, and social sciences. Applicants must be US citizens and hold a PhD or equivalent by June 1989. The exchange program pays travel and living costs, reimbursement for salary loss (up to a point) and expenses for accompanying family members for visits over five months. The application deadline is February 28, 1989. For application forms and

information: NAS, Office of International Affairs (HA 166), 2101 Constitution Ave. NW, Washington, DC 20418; tel. 202/334-2644.

NAE Establishes \$350,000 Prize

Establishment of a biennial \$350,000 prize for engineering that contributes to "human welfare or freedom" was announced last week by the National Academy of Engineering. The NAE said the prize funds will be provided by the Charles S. Draper Laboratory, Cambridge, and the first award will be in October 1989.

In Print: Health, Construction R&D, Arms Control, Etc.

The following publications are obtainable as indicated—not from SGR.

From the National Academy Press, publishing house of the National Academy of Sciences (NAS):

The Future of Public Health (218 pp., \$19.95), report by the Institute of Medicine, health-policy arm of the NAS, expresses dismay about the condition of many federal, state, and local programs and services in public health, defined as "what we, as a society, do collectively to assure the conditions in which people can be healthy." The report, based on a two-year, nationwide study, notes a heavy volume of public-health problems—AIDS, accidental injuries, toxic waste, inadequate pre-natal care, etc.—along with a lessening of political confidence in public-health agencies. It notes, too, "confrontation and suspicion" between medical and public-health professions. Support for the study was provided by the Kellogg Foundation, the Centers for Disease Control, and the Health Resources and Services Administration. The study was conducted by a 22-member committee chaired by Richard D. Remington, Vice President for Academic Affairs, University of Iowa.

Building for Tomorrow: Global Enterprise and the US Construction Industry (104 pp., \$11.95), produced by panels of the National Academy of Engineering (NAE), also part of the National Academy of Sciences, chaired by John Fisher, of Lehigh University, and William Moore, of Dames and Moore, San Francisco. The report warns that construction, which accounts for nearly 10 percent of US gross domestic product, is losing market shares abroad while feeling some heat from foreign competitors on US home territory. It adds: "Other countries appear to be putting more effort than the United States into construction R&D," and cautiously suggests an expansion of construction-related research in universities.

Managing Innovation: Cases from the Services Industries (211 pp., \$22.50 paperbound; \$32.50 hardbound); **Technology in Services: Policies for Growth, Trade, and Employment** (225 pp., \$21.50 paperbound; \$31.50 hardbound), companion reports from the NAE focused on productivity in the services industries, which now account for two-thirds of US gross national product and three-fourths of employment. Topics include Federal Express's electronic package-tracking system, automation of the New York Stock Exchange, and operations of cellular telephone services.

Order from: National Academy Press, 2101 Constitution Ave. NW, Washington, DC 20418; tel. 202/334-3313.

Picking up the Pace: The Commercial Challenge to

American Innovation (56 pp., \$15), report from the Council on Competitiveness, toniest of the angst alliances of academe, industry, and organized labor, warns that the US is frittering away its technological prowess, and urges various remedies, including: a beefed-up Presidential science-advisory system, a permanent R&D tax credit, budget boosts for government research linked to commercialization, international cost-sharing on R&D mega-projects, and federal funds to modernize university labs. Chairman of the Council is John A. Young, CEO of Hewlett-Packard; Co-Chairmen: Paul E. Gray, President, MIT; Howard Samuel, President, Industrial Union Department, AFL-CIO; Ruben F. Mettler, Chairman, TRW, and, as Project Adviser, Bobby Inman, admiral-turned-business-executive.

Order from: Council on Competitiveness, 1331 Pennsylvania Ave. NW, Suite 900, North Lobby, Washington, DC 20004; tel. 202/662-8760.

Presidential Priorities: A National Security Agenda for the 1990s (41 pp., \$4.95), more recommendations for the next President, these from the Union of Concerned Scientists (UCS), long active on arms-control issues. UCS calls for reaffirmation of the 1972 anti-ballistic missile treaty, a ban on antisatellite weapons, reduction of conventional forces in Europe, and adoption of a stiffer chemical-weapons treaty. It also urges a "strong, independent" role for the White House Science Adviser, who, it says, should not be a "cheerleader" for Administration policy.

Order from: Union of Concerned Scientists, 26 Church St., Cambridge, Mass. 02238; tel. 617/547-5552.

Adult Health Practices in the United States and Canada (GPO Stock No. 017-022-01039-9; 72 pp., \$4), based on the 1985 US National Health Interview Survey and Canada's Health Promotion Survey, this comparative study finds the US leads Canada in kicking cigarettes but is behind in use of seatbelts and regular exercise or sports activity; Canadian women drink more than American women. Also covered are pap tests and breast examinations, blood pressure checkups, home smoke detectors, and breakfast habits.

Order from: Superintendent of Documents, USGPO, Washington, DC 20402; tel. 202/783-3238.

Academic Research Equipment in Selected Science/Engineering Fields: 1982-83 to 1985-86 (SRS 88-1; 71 pp. plus appendices, no charge), report of a survey by Westat, Inc., consultants to NSF, on the eternal issue of whether university laboratories are adequately equipped. The report covers most major fields of engi-

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... In Print (Cont.): Medical Science and US Constitution

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neering, materials science, physics and astronomy, chemistry, and environmental, agricultural and biological sciences. It says that academic labs in these subjects disposed of and acquired a lot of new equipment in the 1982-86 span, to the point where in 1985-86, two-fifths of it had been acquired within the preceding three years, and 25 percent of equipment in service in 1982-83 was gone three years later. The report predictably adds: "Despite the pronounced quantitative and qualitative improvements," department chairmen were gloomy about their equipment.

Order from: NSF, Division of Science Resources Studies, 1800 G St. NW, Washington, DC 20550; tel. 202/634-4634.

From the Congressional Office of Technology Assessment (OTA):

Biology, Medicine, and the Bill of Rights (GPO Stock No. 052-003-01133-6; 124 pp., \$4.25), fourth in OTA's excellent series of special reports on science, technology, and the Constitution, requested by the House Judiciary Committee in observation of the bicentennial of the Constitution. This one assesses conflicts between individual privacy and increasingly sensitive techniques for identifying disease-prone individuals; medical interventions at the beginning and end of life, plus other public-policy issues raised by developments in the life sciences.

Previous publications in the series: **Science, Technology, and the Constitution** (GPO Stock No. 052-003-01086-1; 32 pp., \$1.50); **Science, Technology, and the First Amendment** (GPO Stock No. 052-003-01090-9; 80 pp., \$3.50); **Criminal Justice, New Technologies, and the Constitution** (GPO Stock No. 052-003-01105-1; 64 pp., \$1.75).

Enhancing Agriculture in Africa: A Role for US Development Assistance (GPO Stock No. 052-003-01092-5; 328 pp., \$14), a major OTA study, requested by several committees and influential members of both houses, stresses the importance of sub-Saharan "low-resource" agriculture, but says it needs help to keep from falling further behind as the population's predominant source of food and fiber. Outside technological advice and internal institutions should be oriented toward assisting low-cost, local farmers, OTA says. But it notes complaints that "the needs of resource-poor farmers and herders have not been the focus of US-funded research, training, and institution-building programs." OTA particularly urges Congress to maintain sharper oversight on the Agency for International Development. The report was prepared under the supervision of a panel of agriculture and development specialists chaired by Mary B. Anderson, Consultant in International Eco-

nomic Development, Harvard.

Copper: Technology and Competitiveness (GPO Stock No. 052-003-01107-0; 272 pp., \$12), report of a study requested by the Congressional Copper Caucus, says the US copper industry, after dropping 41 percent of its workers and retooling for higher productivity, can now compete internationally—an achievement that did not involve direct federal assistance, OTA notes. But, it warns, the industry would suffer substantially if prices drop again. R&D financed by the industry is a skimpy one percent of sales, OTA reports, while federal R&D funds are being cut. The advisory panel for the report was chaired by George S. Ansell, President, Colorado School of Mines.

Order OTA reports from: Superintendent of Documents, USGPO, Washington, DC 20402; tel. 202/783-3238.

Job Moves, Appointments, Etc.

Victor A. McKusick, of the Johns Hopkins School of Medicine, has been elected President of the Human Genome Organization (HUGO), a newly established international group. Elected Vice Presidents: **Sir Walter Bodner**, Imperial Cancer Research Fund Laboratory, London; **Jean Dausset**, CEPH, Paris; **Kenichi Matsubara**, Osaka University, Japan. Secretary: **John Tooze**, EMBO, Heidelberg, West Germany; Treasurer: **Walter Gilbert**, Harvard.

Frederick Wakeman, President of the Social Science Research Council since 1986, plans to retire from that post in September 1989, and return to the UC Berkeley, where he is Professor of History.

Howard K. Schachman, Professor of Molecular Biology and Biochemistry at UC Berkeley, has been elected President and Chairman of the Board of the Federation of American Societies for Experimental Biology.

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In Quotes: Japanese vs. US Style in Managing Research

From Gaining Ground: Japan's Strides in Science & Technology, (Ballinger, 180 pp., \$32) a book based on the NSF-supported Japanese Technology Evaluation Program (JTECH), by George Gamota and Wendy Frieman. Gamota was formerly a senior R&D administrator at the Pentagon and Director of the University of Michigan Institute of Science and Technology; he is currently President of Thermo Electron Technologies, Waltham, Mass. Frieman is Director of the Asia Technology Program of Science Applications International Corp., McLean, Va.

The United States, for better or worse, has supported basic research whose results are easy to predict, as well as basic research whose results are more difficult to envisage. Japan to a large extent, for better or worse, has supported neither. The Japanese have been able to gain enough understanding of the basic scientific principles to pursue advanced development and product engineering without actually engaging in basic or applied research themselves. Japanese government support for research has been limited to programs with specific milestones, targets, and often prototypes. This approach can be attributed to shrewd economic calculations, to national insecurity about competing in science, or to any number of other factors. However, it is undebatable that this approach has clear commercial benefits, and it is difficult to make a good case for changing a strategy that seems to work so well.

It is equally undebatable that the future Japanese (and American) achievements depend on continued basic research somewhere in the world. The performance of Japanese scientists overseas and the basic research activities now beginning to emerge domestically suggest that Japan has the capability to be a player, if not a major player, in the scientific as well as the technical community.

A . . . related theme is the continued Japanese practice of sending students and professionals overseas for study; reading, carefully screening, and sifting foreign technical literature; and looking abroad for improved products and processes as well as potential competitors, even in fields where Japan enjoys an apparently comfortable lead. This behavior pattern has never existed in the United States for countries that do not pose a military threat. This

difference is one factor responsible for the Japanese lead over the United States in advanced development and product engineering in virtually every field JTECH has analyzed. Two particularly good examples are advanced polymers and opto- and microelectronics . . .

The United States does take a longterm (at least 20 to 30 years) view when allocating money for basic research. The distinction to be drawn is between applied, non-military research programs in the United States, which may die after a few years if no commercial results are visible, and comparable efforts in Japan whose funding (whether from government or industry, and usually both) is much more stable over a 10-year period . . .

All of the JTECH reports referred to Japanese manufacturing excellence and attention to engineering detail, and several pointed to Japanese treatment of manufacturing as a serious discipline, worthy of research, as a key difference between the two countries. This is reflected in Japanese superiority in many areas of mechatronics and in electronic components. Although there has been much talk in the United States about the need to pay attention to manufacturing more generally, there is little evidence of improvement in this area. Even today, leading US universities have not been able (or willing) to entice the best students to go into this area. The same is true of the faculty. If the university infrastructure doesn't consider this area important, neither will the faculty nor the students . . .

Finally, universities, laboratories, and corporations in the United States respond to military as well as civilian funding sources. Some of the best US work cited in this book in fields such as high-tenacity/high-modules polymers and sensors was initiated to support a military objective and resulted in few if any commercial benefits. Targeted research funding with identifiable and deliverable results is possible to a large extent in the United States only for military projects. The fact that Japan can use the same mission orientation for commercial rather than military projects is one more cause of technology and trade imbalances between the two countries.

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